



State of Utah  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt  
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March 25, 1997

Rex Rowley  
Area Manager, Fillmore Office  
Bureau of Land Management  
35 East 500 North  
P.O. Box 778  
Fillmore, Utah 84631

Re: Request for Verification of Permit Status, Jumbo Mining Company, Drum Mine, M/027/007,  
Millard County, Utah

Dear Mr. Rowley:

To assist us in preparing our case to require reclamation of the Drum Mine site, we seek your assistance in reaffirming the Bureau of Land Management's present regulatory position regarding the Drum Mine. As you know, we have directed both Jumbo Mining Company (JMC) and Western States Minerals Corporation (WSMC) to commence reclamation of their respective mining related disturbances associated with the Drum Mine. Both operators have refused to perform reclamation of the mine site at this time.

Attached to this letter is a memorandum from Dan Moquin, Assistant Attorney General, requesting written confirmation to a few permitting questions regarding the permitting status of this mine. We would appreciate receiving a response to these questions at your earliest convenience. If possible, please provide a response no later than April 4, 1997. Thank you very much for your time and continued cooperation in working with us to resolve our mutual permitting concerns with this mining project. Please call me at (801) 538-5286 if you have any questions regarding this request.

Sincerely,

D. Wayne Hedberg  
Permit Supervisor  
Minerals Regulatory Program

jb

Attachments - *memo only*

cc: Dan Moquin, AAG  
Don Ostler, DWQ  
Ron Teseneer, BLM  
Mary Ann Wright, DOGM

M027007.req



Norman H. Bangert  
Governor  
Suzanne Dandoy, M.D., M.P.H.  
Executive Director  
Kenneth L. Alkema  
Director

DEPARTMENT OF HEALTH  
DIVISION OF ENVIRONMENTAL HEALTH

288 North 1460 West  
P O Box 16690  
Salt Lake City, Utah 84116-0690  
(801) 538-6121

December 14, 1988

Mr. Ed King  
Jumbo Mining Co.  
6305 Fern Spring Cove  
Austin, Texas 78730

Re: Jumbo Mine (formerly Drum Mine)  
Project Statement

Dear Mr. King:

We have reviewed your proposal dated 21 October 1988 concerning future operations at the Drum mine which your company has recently purchased. Many of our concerns are related to protecting our ground water resources.

The three (3) heap leach pads defined in our 4 October 1983 construction permit may be leached (per our 23 September 1988 order) until 1 October 1990. Ore shall not be placed any higher than forty (40) feet as stated in our 21 July 1988 letter.

The thirteen (13) acre heap leach pad defined in our 16 March 1984 construction permit may be leached (per our 23 September 1988 order) until 1 October 1990. Ore shall not be placed any higher than forty (40) feet as stated in our 21 July 1988 letter.

The Bureau of Water Pollution Control (the Bureau) will not consider requests to extend the operating life of these facilities beyond 1 October 1990. This is because of the temporary nature of heap leach construction and because the Bureau is developing regulations for heap leach operations which require more protection for surface and ground water than these facilities provide.

Based on the information presented in your 21 October 1988 letter, it seems reasonable that authorized heap leach pad # 4 and unauthorized heap leach pad #5 as defined in our 23 September 1988 order are in fact the fourth permitted heap leach pad as described in our 16 March 1984 construction permit. This conclusion is based on the following:

1. The size of the heap leach pad described in the 16 March 1984 construction permit and the combined size of pads #4 and #5 are approximately the same i.e. 13 acres.
2. Heap leach pads #4 and #5 are in fact not two separate pads but are constructed as one.
3. As best can be established, the pads were constructed at the same time.

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MINERALS PROGRAM  
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DIVISION OF  
OIL, GAS & MINING

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Mr. Ed King  
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4. Jumbo's presentation that the size of heap leach pads #4 and #5 was larger than the hydraulic capacity of the process solution system could supply. Therefore for operational considerations the pad permitted in our 16 March 1984 construction permit is in fact pad #4 and #5 as referred to in our 23 September 1988 order.

Your letter of October 21, 1988 also requested permission to mine and load new ore on the approved heap leach pads. This will be allowed as a modification to our order to Western States Minerals of 23 September 1988.

The following shall be submitted for review and approval prior to removing any ore from the existing heap leach pads or commencing leaching operations:

1. Each pad shall be evaluated to establish the thickness of ore which shall remain to be a protective cover for the liner if you wish to treat, crush or restack the ore. The acceptable thickness shall be at least two feet but no less than twice the maximum ore particle size..
2. The concept of positive depth restraints on the bulldozer ripper tooth shall be explained.
3. The process by which spent ore will be recrushed, exposed to cyanide etc. without contamination to surface or ground water, shall be submitted for review.
4. Provisions which will prevent spillage of cyanide or cyanide laden ore being transported shall be submitted for review.
5. All unauthorized pads shall be dealt with as described in our 23 September 1988 order.
6. Continued leaching of authorized pads #1, #2, #3, #4 and #5 (based on the previous presentation) will be allowed only until 1 October 1990 as stated in our 23 September 1988 order.
7. The quality of the PVC liner shall be evaluated in detail with documentation to determine its present condition and on an annual basis thereafter throughout the remainder of the project. This evaluation shall be reported in writing to the Bureau of Water Pollution Control by 1 May of each year.
8. The neutralization criteria for the heap leach pads and process ponds shall be reviewed and approved by the Bureau.
9. If the ore already on the pads will be leached with chemicals other than cyanide, a new plan must be submitted for review.
10. Existing ore and new ore may be loaded onto any authorized pad to a maximum height of 40-feet. This limitation will not require Jumbo Mining to reduce the height of ore stacked in excess of 40-feet by Western States Minerals to within this limit.

Mr. Ed King  
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Please call Mack Croft or Charlie Dietz if there are any questions.

Sincerely,

Utah Water Pollution Control Committee

Don A. Ostler, P.E.  
Executive Secretary

cc: Roger Foisy, Central Utah District Health Department, Richfield  
Bruce Hall, Central Utah District Health Department, Nephi

CGD/ag  
4076y-15





Norman H. Bangerter  
Governor  
Kenneth L. Alkema  
Executive Director  
Don A. Ostler, P.E.  
Director

State of Utah  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
DIVISION OF WATER QUALITY

288 North 1460 West  
Salt Lake City, Utah  
(801) 538-6146  
(801) 538-6016 Fax

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Reply to: State of Utah  
Division of Water Quality  
Department of Environmental Quality  
Salt Lake City, Utah 84114-4870

March 4, 1992

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MAR 09 1992

DIVISION OF  
OIL GAS & MINING

Mr. Dave Hartshorn  
Jumbo Mining Company  
6305 Fern Spring Cove  
Austin, TX 78730

RE: Process Ponds at Drum Mine

Dear Mr. Hartshorn:

We have received your letter of January 14, 1992, regarding testing of the existing process ponds (the ponds).

The letter discusses the results of the Minnesota Water Balance Test procedure used for determination of leakage from the ponds. Based on the results, you have concluded that there is no leakage from the ponds. Therefore, you believe that the ponds should be approved for further use.

We have considered your request, but we can not concur. We believe that the process ponds must be upgraded to meet current design requirements and standards, for the following reasons:

1. In 1983, Western States Minerals Corporation (Western States) constructed these ponds. Western States represented that these ponds will be operated for a period of 26 to 30 months. On this basis, the then, Utah Water Pollution Control Committee (the committee) permitted construction of the ponds. The permit further obligated Western States to obtain approval for the extended use beyond that period. The committee issued a Notice of Violation (the notice) in the fall of 1988. The committee ordered the cessation of operations of all pads. We note that Jumbo Mining as a successor to Western States has complied with the order which extended the use of the ponds to October 1990. The construction permit issued in 1983, has now expired.
2. The Minnesota Water Balance Test (the Minnesota procedure) is one method to establish leakage from the ponds. However, it has limitations. At the minimum correlation coefficient of 95 percent, the accuracy of the procedure is  $\pm 1,000$  gallons per acre per day. Also, the procedure was primarily developed for three to six feet deep lagoons containing domestic sewage.



March 4, 1992

Therefore, extrapolation of results based on the procedure used for shallow lagoons, to establish the rate of leakage from the deep ponds containing cyanide-laden solution should be viewed with extreme caution. The observations show no major leakage, but do not preclude the possibility that leakage is occurring. However, observations indicate that the existing liner may be suitable as one component of the upgraded liner configuration for the ponds.

3. The existing ponds with one liner and a base with relatively high hydraulic conductivity does not provide any mechanism for indication of leakage. The ground water quality protection rules require a point or a mechanism of monitoring for compliance with the performance conditions of the permit. In the last eight years, advances in construction materials and techniques have made compliance with the ground water rules feasible. Presently, process ponds are built using a double geomembrane and geonet head-break configuration laid over an engineered foundation with very low hydraulic conductivity.

We may consider a proposal of using the existing ponds provided that:

- a. The ponds are upgraded suitably to minimize the release of process fluids, and,
- b. A mechanism for monitoring the performance of the ponds is established.

You may save the cost of constructing ponds at another site by upgrading the existing ponds. Also, we may consider the existing liner equivalent to an engineered clay foundation with the maximum hydraulic conductivity of  $1 \times 10^{-7}$  centimeters per second, in light of the leakage test you have made.

If you have any other questions in the matter, please contact Mr. Kiran L. Bhayani or Mr. Dave Rupp of my staff.

Sincerely,



Don A. Ostler, P.E.  
Director

DAO:KLB:rvg

cc: Mr. Wayne Hedberg, Division of Oil, Gas and Mining  
Mr. Roger Foisy, P. E., Central Utah District Engineer  
Mr. Jerry Riding, Tetrattech Engineers